

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

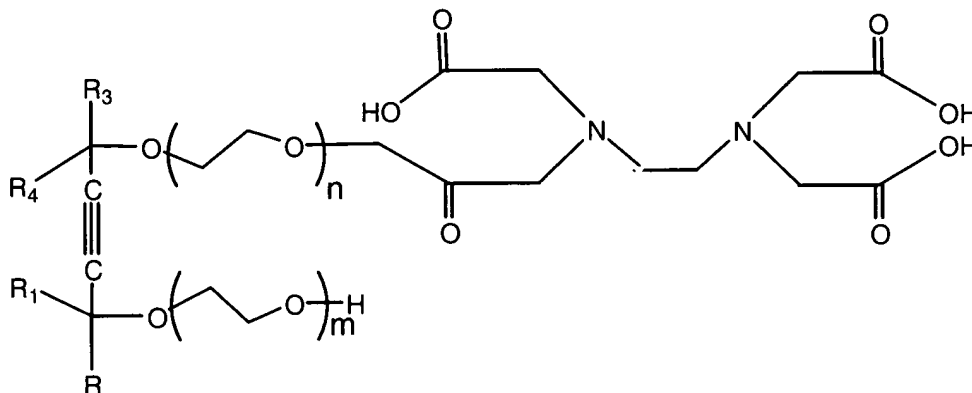
1 to 23. (Canceled)

24. (Currently Amended) A dense cleaning fluid for removing contaminants from a substrate, the dense cleaning fluid comprising:

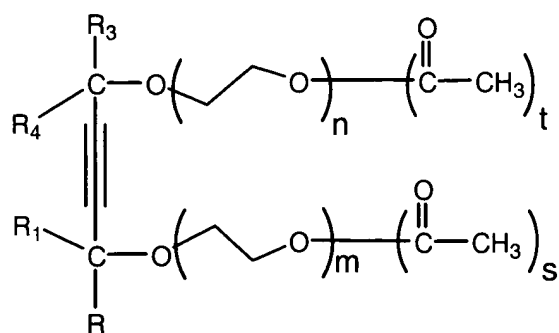
a dense fluid; and

at least one derivatized etherified acetylenic alcohol or a derivatized etherified acetylenic diol wherein the derivatized alcohol or the derivatized diol comprises at least one interactive functional group selected from the group consisting of an amine, an acid, an ester, ~~an ether,~~  
~~an alcohol,~~ a nitrile, a carbonate, and combinations thereof.

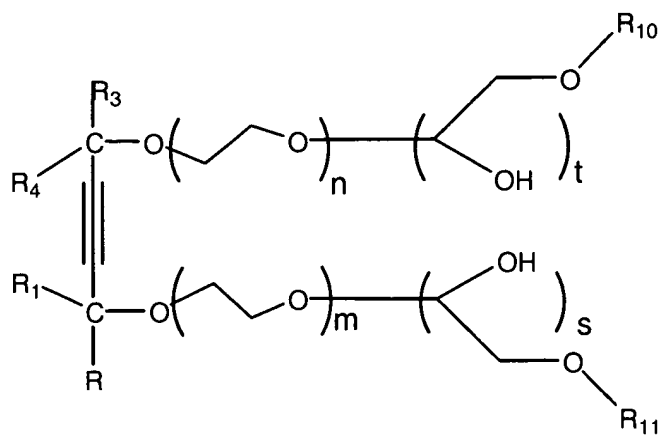
25. (Currently Amended) The dense cleaning fluid of Claim 24 wherein the derivatized etherified acetylenic alcohol or the derivatized etherified acetylenic diol is at least one member selected from the group consisting of compounds represented by Formulas (D) through (I):



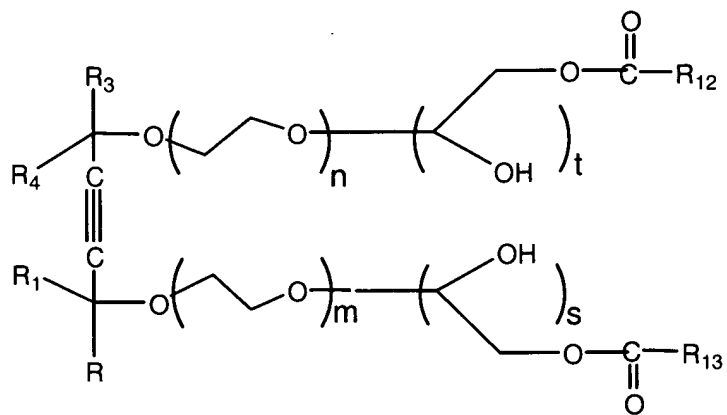
Formula D



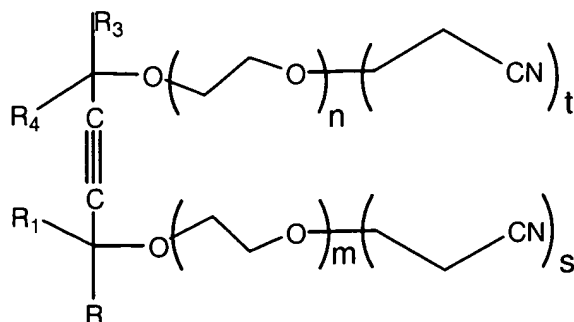
Formula E



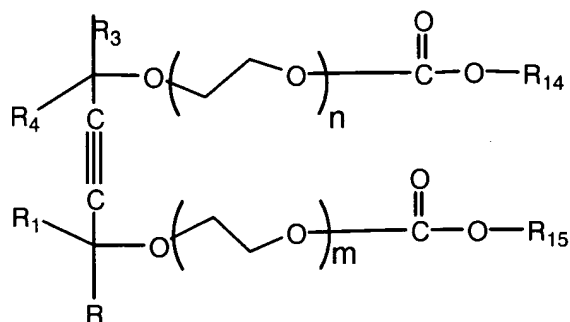
Formula F



Formula G



Formula H



Formula I

wherein R, R<sub>1</sub>, R<sub>3</sub>, and R<sub>4</sub> are independently a hydrogen atom, a linear alkyl group comprised of from 1 to 34 carbon atoms, or a branched alkyl group comprised of from 2 to 34 carbon atoms; R<sub>10</sub> and R<sub>11</sub> are each independently an alkyl group or a fluoroalkyl group comprised of from 1 to 34 carbon atoms; R<sub>12</sub>, R<sub>13</sub>, R<sub>14</sub>, and R<sub>15</sub> are each independently an alkyl group comprised of from 1 to 34 carbon atoms; the value of m+n is a number ranging from 0 to 30 and the value of s+t is a number ranging from 1 to 2.

26 to 29. (Canceled)

30. (Currently Amended) A method for removing contaminants from a substrate, the method comprising:

- introducing the substrate comprising contaminants into a processing chamber;
- contacting the substrate with a dense cleaning fluid comprising a dense fluid and at least one processing agent selected from the group consisting of a derivatized etherified acetylenic alcohol, a derivatized etherified acetylenic diol, and combinations thereof to provide a spent dense fluid and a treated substrate; and
- separating the contaminants and the at least one processing agent from the spent dense fluid,

wherein the derivatized etherified alcohol or the derivatized etherified diol comprises at least one interactive functional group selected from the group consisting of an amine, an acid, an ester, ~~an ether, an alcohol,~~ a nitrile, a carbonate, and combinations thereof.

31. (Original) The method of Claim 30 further comprising introducing ultrasonic energy into the processing chamber during at least a portion of the contacting step.

32. (Original) The method of Claim 30 wherein a pressure of the contacting step ranges from 1000 to 8000 psig.

33. (Original) The method of Claim 30 wherein a temperature of the contacting step ranges from 10 to 100°C.

34. (Currently Amended) A method for removing contaminants from a substrate, the method comprising:

introducing the substrate comprising contaminants into a processing chamber;

combining a dense fluid, at least one fluorinated dense fluid, and at least one processing agent to provide a dense cleaning fluid;

contacting the substrate with the dense cleaning fluid to provide a spent dense cleaning fluid and a treated substrate;

separating the contaminants and the at least one processing agent from the spent dense cleaning fluid; and

separating at least one fluorinated dense fluid from the spent dense cleaning fluid wherein the at least one fluorinated dense fluid is purified to provide a purified fluorinated dense fluid and wherein at least a portion of the at least one fluorinated dense fluid in the combining step comprises the purified fluorinated dense fluid, wherein processing agent selected from the group consisting of a derivatized etherified acetylenic alcohol, a derivatized etherified acetylenic diol, and combinations thereof, wherein the derivatized etherified alcohol or the derivatized etherified diol comprises at least one interactive functional group selected from the group consisting of an amine, an acid, an ester, ~~an ether, an alcohol,~~ a nitrile, a carbonate, and combinations thereof.

35. (Original) The method of claim 34 further comprising depressurizing and/or heating the spent dense fluid to transform the spent dense fluid into a gaseous phase.

36. (Original) The method of claim 34 wherein a pressure of the contacting step ranges from 500 to 4000 psig.

37. (Original) The method of claim 34 wherein a temperature of the contacting step ranges from 35 to 100°C.

38. (Original) The method of claim 34 wherein the first separating step is conducted using at least one method selected from filtration, sedimentation, inertial separation, electrostatic precipitation, acoustic precipitation, condensation, thermal gradients, magnetic separation, flashing and combinations thereof.

39. (New) The dense cleaning fluid of claim 24 wherein the dense fluid comprises one or more components selected from the group consisting of carbon dioxide, nitrogen, methane, oxygen, ozone, argon, hydrogen, helium, ammonia, nitrous oxide, hydrogen fluoride, hydrogen chloride, sulfur trioxide, sulfur hexafluoride, nitrogen trifluoride, monofluoromethane, difluoromethane, trifluoromethane, trifluoroethane, tetrafluoroethane, pentafluoroethane, perfluoropropane, pentafluoropropane, hexafluoroethane, hexafluoropropylene, hexafluorobutadiene, octafluorocyclobutane, and methyl fluoride.

40. (New) The dense cleaning fluid of claim 39 wherein the dense fluid comprises carbon dioxide.

41. (New) The dense cleaning fluid of claim 24 wherein the dense fluid comprises at least one fluorinated dense fluid selected from perfluorocarbon compounds, hydrofluorocarbons, fluorine-containing compounds, fluorinated nitriles, fluoroethers, fluoroamines, fluorinated gases, and combinations thereof.